

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 09224690
PUBLICATION DATE : 02-09-97

APPLICATION DATE : 21-02-96
APPLICATION NUMBER : 08057044

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INT.CL. : C12P 17/18 C07H 21/04 C12N 9/88 C12N 15/09 // C12N 1/21 (C12P 17/18 ,
C12R 1:19), (C12N 9/88 , C12R 1:19), (C12N 15/09 , C12R 1:19), (C12N
1/21 , C12R 1:19)

TITLE : PRODUCTION OF BIOTIN

ABSTRACT : PROBLEM TO BE SOLVED: To effectively produce biotin, which is important as one of vitamins, by culturing a microorganism having a plasmid containing an S-adenosyl-L-methionine synthetase gene and a biotin operon, and recovering products from the culture mixture.

SOLUTION: An S-adenosyl-L-methionine synthetase gene is obtained by culturing strains of Escherichia coli W3110 (ATCC 1498), subsequently extracting the chromosomal DNA according to an ordinary DNA-extraction method and cloning through PCR amplification with synthetic primers using the chromosomal DNA as template. Subsequently, the obtained gene is integrated into a plasmid containing a biotin operon to prepare a recombinant plasmid, and the recombinant plasmid is transduced into a microorganism such as Escherichia coli to carry out transformation. Then, the transformant is cultured in a nutrient medium, and biotin is recovered from the culture mixture. Thus, the objective biotin, which is an important vitamin for animals, plants and microorganisms, is effectively produced.

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